

(No Model.)

L. BEAUPAIN.

VELOCIPÈDE.

No. 295,333.

Patented Mar. 18, 1884.

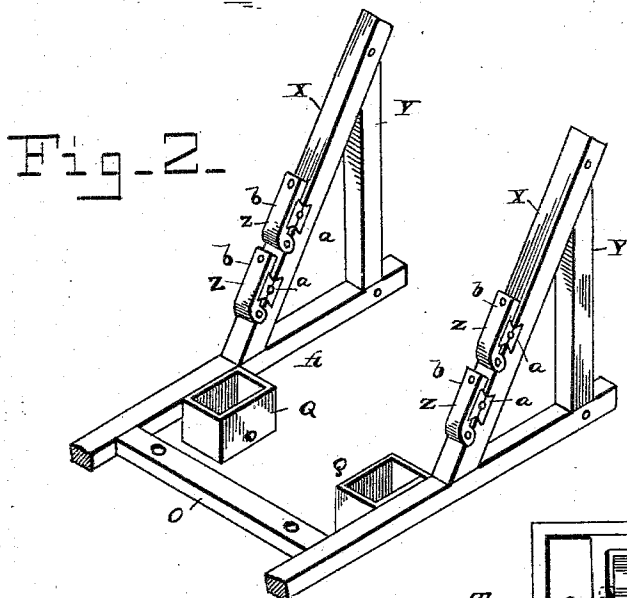
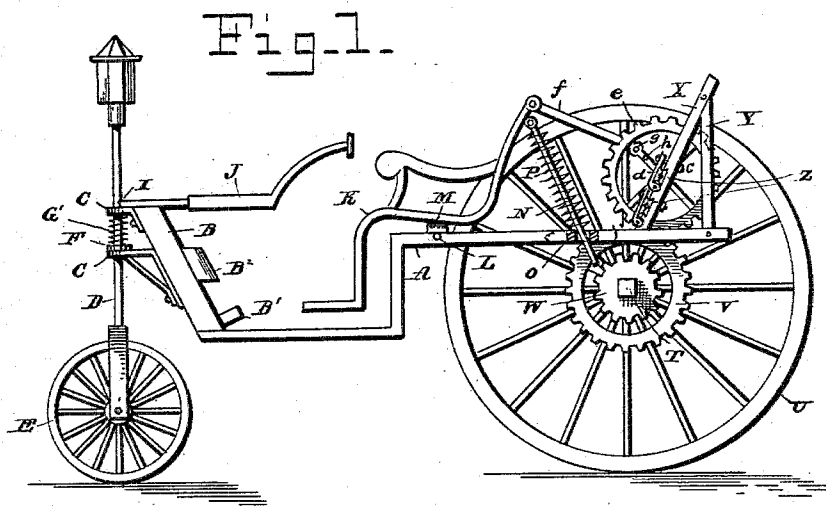


Fig. 3.

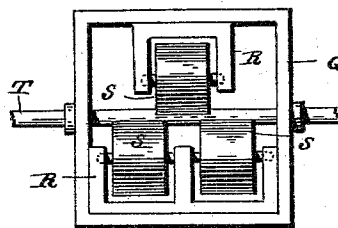
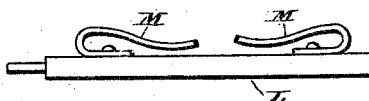


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

LOUIS BEAUPAIN, OF SPRINGFIELD, OHIO.

VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 295,333, dated March 18, 1884.

Application filed January 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BEAUPAIN, a citizen of the United States, residing at Springfield, in the county of Clarke and State of Ohio, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in velocipedes; and it has for its objects, first, to provide means whereby the body of the operator may be oscillated to and fro and his weight used to propel the vehicle; and, second, to provide means whereby the speed may be increased and the power decreased, or vice versa, at the will of the operator.

In the accompanying drawings, forming a part of this specification, and on which like letters of reference indicate corresponding features, Figure 1 represents a side elevation of my improved velocipede, one of the driving-wheels being removed, so as to more clearly illustrate some of the features; Fig. 2, a detached perspective view of the rear portion of the frame; Fig. 3, a detached plan view of the anti-friction rollers and the casing which carries them; and Fig. 4, a detached view, in side elevation, of the seat-supporting bar.

The letter A refers to the frame of my improved velocipede, the same being constructed preferably of metal and in some instances of tubes. The intermediate portion of this frame is depressed, so as to make it convenient to mount, and the forward end terminates in a dash-board, B, to which are adjustably secured the semicircular heel-piece B' and the pocket-shaped toe-piece B". Extending from this board are the lugs or brackets C, through which extends the fork-shaft D, between the members of which is mounted the guide-wheel E. A collar, F, is secured to this shaft between the brackets C, and a spiral spring, G, is placed around it and adapted to bear upon said collar. The upper end of this spring receives the upper bracket C, whereby the weight is supported in a yielding manner, while the lower bracket C serves to brace the shaft D. I contemplate placing the sleeve of a lantern on the upper end of the shaft D. Extending

rearwardly from this shaft is an arm, I, over which is adapted to fit a tiller, J, whereby the velocipede is guided.

The letter K refers to an oscillating seat mounted upon the transverse rock-shaft L, the ends of which have a bearing in the side pieces of the frame. Secured to this shaft are springs M, which serve as a medium of connection between it and the seat, the elastic nature of which serves to counteract the effect of jarring incident to ruts in the road. Near the upper end of the back of the seat K are pivotally connected rods N, the free ends of which are adapted to play through apertures in a transverse bar, O, which is secured to the side pieces of the frame. Interposed between this transverse bar and the seat-back are spiral springs P, which serve to keep the seat in its normal position, as indicated in Fig. 1.

The letter Q refers to boxes or casings, preferably constructed of metal and secured firmly to the side pieces of the frame. Within these boxes are fitted brackets or hangers R, which form bearings for anti-friction rollers S. These rollers form anti-friction bearings for the driving-shaft T, upon which they rest, the said boxes being provided with apertures near their bottom, through which the said shaft passes. Rigidly secured to the respective ends of the said shaft are the driving and supporting wheels U, constructed in the usual or any approved manner; also mounted on the said shaft, near each of the driving-wheels, are the gear-wheels V and W. Mounted on the side pieces of the frame are the oblique standards X, the upper ends of which are braced by means of the upright rods or bars Y. These standards serve as supports for the bearings Z, the said bearings being composed of the blocks *a*, secured permanently to the standards and the hinged bars *b*. These bars are provided with bolts *c*, which extend through the standards and are held by means of nuts. By this means it will be observed the bearings may be opened and closed at will, for a purpose which shall presently appear.

The letter *d* refers to an auxiliary shaft, which is provided with gear-wheels *e* near its respective ends. When it is desired to apply the maximum power, this shaft is mounted in

the upper bearings Z, in which instance the gear-wheels *e* intergear with the driving gear-wheels V. Motion is communicated to the former of these gear-wheels by means of the pitmen *f*, mounted on the studs *g*, extending therefrom, the other ends of said pitmen being flexibly connected with the upper rear portion of the seat. In order to vary the speed and relatively the power, I contemplate sometimes connecting the pitmen with the studs *h* of the gear-wheels *e*, these studs being nearer the center of the wheels than the studs *g*. This change is resorted to when it is desirable not to move the auxiliary shaft *d* from the upper to the lower bearings Z. Whenever it is desired to materially vary the power and relatively the speed, and to apply the minimum of power, (which gives the maximum of speed,) the said auxiliary shaft is removed from the upper bearings Z and placed in the lower of said bearings, and the gear-wheels *e* made to intergear with the smaller driving gear-wheels W. The flexible character of the connections between the pitmen *f* and the gear-wheels *e* and the said pitmen and the seat admits of a slight longitudinal movement of the auxiliary shaft, so as to bring the gear-wheels *e* in line with the gear-wheels W.

It will be observed from the above description of the construction of this velocipede that momentum is imparted to it by the oscillation of the seat, this being effected by the operator throwing his body rearward. The spiral spring P, when the seat is at the limit of this rearward stroke, acts to aid in throwing the same upward, thereby lessening the work of the operator and preventing the pitmen *f* from acting against the rotation of the gear-wheels. The labor of the operator to supply additional power to that exerted by the spring necessary to throw the seat upward and forward is made much easier by the use of the toe and the heel pieces, whereby he is enabled to draw his body forward in effecting this return of the seat.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a velocipede, the combination, with the oscillating seat, the standards having two sets of bearings, and the main driving-shaft having driving gear-wheels of different diameters, of the auxiliary shaft carrying gear-wheels, and adapted to operate in either set of bearings and to receive motion from the seat.

2. In a velocipede, the combination, with the boxes having brackets and anti-friction rollers mounted therein, of the main driving-shaft, upon which the said rollers rest, the rollers forming a bearing for the shaft.

3. In a velocipede, the combination, with the oscillating seat, of the pivoted rods, and the springs which act to aid in throwing the seat upward or forward.

4. In a velocipede, the combination, with the oscillating seat, the pivoted rods, and the springs, which act to aid in throwing the seat upward or forward, of the heel and toe pieces adapted to receive the feet of the operator, whereby they are prevented from slipping, and he is enabled to exert the balance of power necessary to bring the seat forward.

5. In a velocipede, the combination, with the oscillating seat, of the transverse rock-shaft and the interposed springs, whereby the seat and shaft are yieldingly connected together.

6. In a velocipede, the combination, with the main frame, of the standards having two sets of bearings, whereby the position of the auxiliary shaft relatively to the driving-shaft may be varied.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS BEAUPAIN.

Witnesses:

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